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10/546,006	08/18/2005	Jeong Chang Lee	1033622-000017	9388
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EXAMINER				
HU, HENRY S				
ART UNIT		PAPER NUMBER		
1796				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/546,006

Applicant(s)

LEE ET AL.

Examiner

HENRY S. HU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment of April 27, 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-17 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1 and 3-17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on August 18, 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10-29-2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1. USPTO has received **Amendment** filed on April 27, 2009, which is in response to Non-Final office action filed on October 29, 2008. With such an amendment, **Claims 1, 3, 9 and 12 are amended; Claim 2 is cancelled, while no new claim is added.** To be specific, parent **Claim 1** is amended to incorporate the limitation of **Claim 2** so that heat-meltable fluoropolymer fine powder is now an agglomerate powder having average particle size of no more than 10 μm , which comprises agglomerated colloidal fine particles of the heat-meltable fluoropolymer. Dependent **Claim 2** is cancelled accordingly. Dependent **Claims 3, 9 and 12** are only amended so as to overcome claim objections.

This Application is **371/PCT/JP04/01868** with a Japanese priority of February 19, 2003. Applicants' **two IDS**' (1 page each) has been filed so far, while **Examiner has now signed the one IDS filed on October 29, 2008** per Applicants' request on page 6 of Remarks. Examiner **accepts Applicants' one drawing sheet with Figures 1-2** (a brief description is on page **6**). **Claims 1 and 3-17 with a total of three independent claims** (Claims 1, 9 and 12) are now pending, while non-elected Claims 9-11 and 12-17 (Group II) are all withdrawn from consideration by Examiner. An action follows.

DETAILED ACTION

Response to Argument

2. Applicant's argument filed on April 27, 2009 has been fully considered but they are not persuasive. The focal arguments related to the patentability will be addressed as follows: Such

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an amendment on parent **Claim 1** involves one thing as: parent **Claim 1** is once-amended to only incorporate the limitation of **Claim 2** so that the heat-meltable fluoropolymer fine powder is now **an agglomerate powder having average particle size of no more than 10 μ m, which comprises agglomerated colloidal fine particles of the heat-meltable fluoropolymer.**

Accordingly, 102(b) and/or 103(a) rejections are still sustained after viewing Applicants' arguments. **Final office action is thereby applied.** An action follows.

Specification

3. The disclosure is objected to because of the following informalities:

On page 6 at line 23-24, page 7 at line 1, the use of "EPE" for the copolymer of tetrafluoroethylene-hexafluoropropylene-perfluoro(alkylvinylether)-(alkylvinylether) as well as the use of "PCTFE" for polyvinylidenefluoride is very improper according to the art. For instance, **PCTFE is known in the art to be used for polytrichlorofluoroethylene**, while PVDF is used for polyvinylidenefluoride. Correction seems essential.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. The limitation of “once-amended” parent **Claim 1** in present invention relates to **a heat-meltable fluoropolymer composite composition** comprising **two** components including:

*(A) **a heat-meltable fluoropolymer fine powder** that is an agglomerate powder having average particle size of no more than 10 μ m, which comprises agglomerated colloidal fine particles of the heat-meltable fluoropolymer, and*

*(B) **a layered-compound** organically modified with **tetraphenyl phosphonium ions**.*

See other limitations of dependent Claims 3-8.

7. **Claims 1 and 3-8 are rejected** under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Ellsworth (US 5,962,553 and its equivalent WO 98/10012)** for the reasons set forth in paragraphs **8-10** of office action dated 10-29-2008 as well as the discussion below.

8. **Claims 1 and 3-8 are rejected** under 35 U.S.C. 103(a) as being unpatentable over **Singh et al. (US 6,057,035) or Knoll et al. (US 6,841,211 B1)**, each individually **in view of Ellsworth (US 5,962,553 and its equivalent WO 98/10012)** for the reasons set forth in paragraphs **11-15** of office action dated 10-29-2008 as well as the discussion below.

9. **With respect to 102/103 rejection, Ellsworth** in US and WO patents has already disclosed the preparation of nanocomposite type compositions by melt-blending **two** things including: (A) **a melt processable polymer** having a high melt processing temperature and (B) **an organophosphonium cation modified layered clay**. According to Ellsworth's disclosure, said melt processable polymer can be **fluoropolymer** (see column 4, line 34 – column 7, line 67), while said organophosphonium cation can be the claimed **tetraphenylphosphonium** since **both R₁ and R₂ in the formula R₁P⁺(R₂)₃ can be phenyl and/or substituted phenyl** (see column 3, line 32-38).

10. Examiner has closely checked Applicants' key argument from page 8 at bottom section to page 9 at top section as "Ellsworth's organophosphonium cation is different from a tetraphenyl-

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phosphonium ion because **R₁ in the structure is defined to be an alkyl or arylalkyl (Examiner believes it should be alkylaryl) group and thus cannot be a phenyl group**". Attention is directed to **two** facts including: (A) **R₁ can be alkyl-aryl (see column 3, line 34), which is still considered as an alkyl-substituted aryl according to the art**, and (B) parent Claim 1 requires using **tetraphenylphosphonium ions**, which as well includes **tetraphenylphosphonium type ions** such as the phenyl group is alkyl-substituted. According to the art, alkylaryl is still treated as an aryl type, while arylalkyl is considered as a substituted alkyl only. Therefore, Ellsworth's organophosphonium cation still reads on the claimed tetraphenylphosphonium ions since its scope includes tetraphenyl type phosphonium ions.

11. Examiner understands that Applicants may have presented some excellent and/or unexpected results on page 9 in the middle of Remarks. With recent amendment, the heat-meltable fluoropolymer fine powder is now an agglomerate powder having average particle size of no more than 10 μm , which comprises agglomerated colloidal fine particles of the heat-meltable fluoropolymer. However, the issue of "inherent property" can be still applied. Additionally, unexpected results cannot be used to overcome 102 rejection according to MPEP.

12. **With respect to pure 103 rejections**, each of **two** primary references including Singh and Knoll has already disclosed the preparation of some un-fluorinated polymer/inorganic nanocomposites by **melt-blending a melt processable un-fluorinated polymer and an organophosphonium cation modified layered clay**. Therefore, Singh and Knoll in combination or alone is silent about **two** things including: (A) **using the starting fluoropolymer**

and (B) it is in the form as agglomerated fine powder as modified. The same ground of rejection as discussed earlier can be still applied.

13. 102(b) and/or 103(a) rejections are still sustained after viewing Applicants' arguments.

Final office action is thereby applied with current situation on parent Claim 1. Further amendment on parent Claim 1 is suggested.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Vasu Jagannathan, can be reached on (571) 272-1119. The **fax** number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Peter D. Mulcahy/
Primary Examiner, Art Unit 1796

/Henry S. Hu/
Examiner, Art Unit 1796

June 10, 2009